

REMARKS

This is in response to the Office Action of November 7, 2000. In that Office Action, Claims 1-5, 7-8, 10, 37, 40-41 and 43 were rejected under 35 USC 102(e) as being anticipated by U.S. Patent No. 5,914,039 to Mahendran et al.;

Claims 1-8, 10-11, 37, 40 and 43-45 were rejected under 35 USC 102(b) as being anticipated by U.S. Patent No. 4,957,943 to McAllister et al.;

Claims 1-8, 10-11, 37, 40-41, 44-45 were rejected under 35 USC 102(b) as being anticipated by U.S. Patent No. 4,728,432 to Sugiyama et al.;

Claims 1-6, 40-42 and 44 were rejected as being clearly anticipated by U.S. Patent No. 5,660,903 to Anderson et al.; and

Claim 42 was rejected under 35 USC 103(a) as unpatentable over the above-identified Sugiyama et al. patent or McAllister et al..

By this Amendment, all of the pending claims have been canceled and new Claims 46-66 have been added. For the reasons set forth below, Applicants respectfully submit that Claims 46-66 are patentable over the art of record and should be allowed.

New Claim 46 is directed to a flexible composite sheet membrane that includes a flat sheet polymeric support having a first side and a second side. Each of the first and second sides includes a coating of a non-fiberized polymeric material. The polymeric material includes a particulate blended with a polymer, with the particulate being substantially physically immobilized by

the polymer. In the membrane of Claim 46, each of the sides has a coating of the material that is substantially equal in thickness. The outer surface of the membrane is a porous and selectively permeable skin. Less particulate is disposed near the skin than is disposed further in the interior of the membrane.

Turning first to McAllister et al., McAllister et al. do not disclose or suggest a flexible composite sheet membrane of the type recited in Claim 46. McAllister et al., for example, do not disclose a composite sheet membrane having a polymeric support having a first side and second side wherein each of the sides has a coating of the polymeric material that is substantially equal in thickness and a porous and selectively permeable skin. McAllister et al. also do not disclose a membrane that has less particulate near the skin than further in the interior of the membrane.

As previously mentioned, the passage relied upon by the Patent Office (Col. 11, lines 45-59) discloses a "particle filled microporous material which can be modified to produce a porous membrane having a gradient porosity therethrough." The particular passage from McAllister et al. relied upon by the Patent Office says nothing about (1) each side (of the film) having a coating of the material that is substantially equal in thickness and having a porous and selectively permeable skin or (2) less particulate disposed near the skin than is disposed further in the interior of the membrane.

During manufacture, one of the surfaces of the McAllister et al. film is kept in contact with a chilled casting wheel to fuse or seal that surface of the structure, "while the opposite side remains porous" (emphasis added) (Column 11, lines 50-53). Thus, the opposite surface, which has been fused or sealed, is, presumably, not porous. This is in stark contrast to the membrane of Claim 46 wherein each side has a porous and selectively permeable skin. For this reason alone, Claim 46 is not anticipated by McAllister et al., nor would it have been obvious in view of McAllister et al..

In addition, McAllister et al. do not disclose a membrane wherein less of the particulate is disposed near an outer skin than is disposed further in the interior of the membrane. That McAllister et al. do not disclose the membrane of Claim 46 is confirmed by the Office Action itself. In the Office Action, the Patent Office rejects the claims (now cancelled) based on McAllister et al., but cites another reference, Mahendran et al., for its disclosure of an extrusion process which presumably would result in the redistribution of particles. The need to rely on a secondary reference, confirms that McAllister et al. cannot be an anticipation ("Anticipation...requires the presence in a single prior art disclosure of each and every element of a claimed invention," Kegel Co. v. AMF Bowling, Inc., 44 USPQ 2d 1123, 1129 (Fed. Cir. 1997)). Nor is there any suggestion in McAllister et al. of the desirability of providing a membrane with the particle

distribution of Claim 46. Thus, there would have been no motivation to even look to the extrusion process of Mahendran et al.

Turning now to Sugiyama et al., according to the Patent Office, "many of the coating methods within genuses suggested by Sugiyama et al. involve shear forces (example, extrusion, knife coating, continuous web dip coating) also providing for the formation of a skin region" (emphasis added). The "genuses" are presumably the methods actually disclosed in Sugiyama et al., which are "flowcasting, dipping, coating, spraying" (Col. 3, lines 35-36).

Sugiyama's disclosure of these "genuses" cannot, however, anticipate the membrane of Claim 1 (and/or the method by which it is made). It is well settled that disclosure of a genus does not necessarily disclose every species. In Corning Glass Works v. Sumitomo Electric, 9 USPQ 2d 1962, 1970 (Fed. Cir. 1989), the patent challenger asserted that a claim to a genus would inherently disclose all species. The Federal Circuit rejected the challenger's argument as "wholly meritless whether considered under §102(b) or under 35 USC §103..." Id.

In any event, as set forth in the attached Declaration of Dr. Sternberg, the processes actually disclosed in Sugiyama et al. would not, by necessity, result in a membrane with a particle distribution as described and claimed in the present application. As stated in the Declaration, without knowing more about the

specifics of the disclosed methods, one of skill in the art would not assume that the techniques described in Sugiyama et al., would result in such a particle distribution. In short, Sugiyama et al. do not expressly or inherently disclose a membrane of the type recited in Claim 46.

"Inherency may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient." Hansgirg v. Kemmer, 40 USPQ 665, 667 (CCPA 1939). "Absent the showing of some reasonable certainty of inherency, the rejection...under 35 USC §102 must fail." In re Brink 164 USPQ 247, 249 (CCPA 1970). "Anticipation of inventions set forth in product claims cannot be predicated on mere conjecture, respecting the characteristics of products that might result from the practices of processes disclosed in references." Gore v. Garlock, 220 USPQ 303, 314 (Fed. Cir., 1983).

With respect to Mahendran et al. and Anderson et al., neither Mahendran et al. or Anderson et al. disclose or suggest a membrane of the type recited in Claim 46. For example, neither Mahendran et al. nor Anderson et al. disclose a flexible composite sheet membrane that includes a flat sheet polymeric support wherein the support has a first side and a second side coated with a non-fiberized polymeric material. (It is noted that old Claim 45, now cancelled, which recited a support, was not rejected under either Mahendran et al. or Anderson).

Claim 56

New Claim 56 is directed to a flexible, composite sheet membrane that includes a flat sheet polymeric support having a first and second side. At least one of the sides includes a first coating of a non-fiberized polymeric material. The polymeric material includes a particulate blended with a polymer which substantially immobilizes the polymer. The membrane further includes a second coating of a hydrophilic agent.

Applicants respectfully submit that neither Sugiyama et al. nor Anderson et al. disclose or suggest a membrane with a support having a first side and a second side wherein at least one of the sides includes a first coating of a polymeric material that includes a particulate randomly dispersed within and immobilized by a polymer, and a second coating of hydrophilic agent.

As for McAllister et al., the Patent Office cites the following passage in support of its position that McAllister et al. disclose a "hydrophilic membrane."

The particle-filled microporous material of the invention may be further modified, either before or after removal of the compatible liquid, by depositing various materials on the surface thereof using known coating or deposition techniques. For example, the particle-filled microporous material may be coated with metal by vapor deposition or sputtering techniques or by materials such as adhesives, aqueous or solvent-based compositions, and dyes. Coating can be accomplished by such conventional coating techniques as, for example, roller coating, spray coating, dip coating, and the like (Col. 11, lines 3-13).

The above-cited passage speaks generally of depositing various materials on the surface of the film. It does not, however, disclose, suggest or even hint of a membrane coated with a hydrophilic agent. Although a hydrophilic agent may be an aqueous based composition, Claim 56 specifically recites a hydrophilic agent. For this reason alone, the cited passage in McAllister et al. does not anticipate Claim 56, nor would it have rendered Claim 56 obvious.

Claim 66

Claim 66 is directed to a flexible composite sheet membrane, including a flat sheet polymeric support, a first coating of a non-fiberized polymeric material, including a particulate blended with and randomly dispersed within the polymer. The particulate is substantially physically immobilized by the polymer. The membrane further includes a permeable and porous skin on the outer surface of the membrane. The membrane is formed, in part, by introducing the support into a chamber, including the polymeric material. The chamber has a wide opening, a pair of converging walls terminating in a narrow passageway of a predetermined length and an exit gap through which the support is passed at the rate of approximately 1 to 4 feet per minute.

As set forth on pages 16-17 of the present application, this arrangement is believed to result in a membrane wherein less particulate is dispersed near the outer skin than is disposed further in the interior portions of the membrane. For the reasons

discussed above, a membrane of this type is neither disclosed or suggested by the cited references. For these reasons, Claim 66 should also be allowed.

For the reasons set forth above, Applicants respectfully submit that the new Claims 46-66 are now in condition for allowance. Accordingly, reconsideration and allowance of such claims are respectfully requested.

Respectfully submitted,



Andrew G. Kolomayets
Attorney of Record
Registration No.: 33,723

COOK, ALEX, McFARRON, MANZO,
CUMMINGS & MEHLER, LTD.
200 West Adams Street, Suite 2850
Chicago, Illinois 60606
(312) 236-8500